AFS-400 Field Update

Flight Technologies and Procedures Division

"Improving Safety and NAS Operations through Flight Technologies and Procedures"

Volume 1, Issue 3: **Fall 2014**

A Message from Bruce

Thank you so much for taking the time to check out the Fall issue of the AFS-400 Field Update. We have received wonderful feedback from readers on the content in the last two issues, and interest in the newsletter is steadily increasing.

I encourage you to help spread our message further by forwarding this newsletter along to your colleagues in industry and other agencies who may find the content valuable. As I mentioned in the last issue, we want the newsletter to provide transparency in the Division by communicating our work, our challenges, and our opportunities. By disseminating our message, you can help the Division achieve its goal of becoming more transparent.

Also, please continue to send your suggestions, ideas, and comments to AVSNextgen@faa.gov.

Bruce DeCleene
Manager, Flights Technologies and Procedures Division, AFS-400

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Trending: Aviation*

@MarcusAlzona #SWIM Historical Review - #ATIEC keynote by Steve Bradford FAA Chief Scientist for Architecture & NextGEN Development

@FAANews The deadline's 2020, but the future is now. NextGen is changing GA today #FlyNextGen #avgeek

@WeAreALPA ADS-B is one of the most important underlying technologies in #NextGen

In this Issue:

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Highlighted Stories

PARC Charter Renewed until 2018

On June 9, 2014, the Administrator extended the charter for the Performance-Based Operations Aviation Rulemaking Committee (PARC) until June 2018 pursuant to 49 U.S.C. 106(p)(5). The PARC provides a forum for the United States (U.S.) aviation community to discuss, prioritize, and resolve issues; provide direction for U.S. flight operations criteria; and produce U.S. consensus positions for global harmonization. The extension will allow industry to remain engaged with the FAA in reaching consensus-based solutions for new operations, technology, and implementation issues.

PARC's predecessor, Terminal Area Operations Aviation Rulemaking Committee (TAOARC), began in November 2001 as a forum for the Aviation Industry to have their voices heard. In 2004, TAOARC's charter was renewed under its new name, PARC, with FAA Order 1110.139. This is the fourth time since the first PARC was convened that the charter has been renewed. The charter's four year duration is unique. In the last year, the average duration for aviation rulemaking committee charters was 12 months, with the shortest charter being four months and the longest being two years. Indeed, past PARC charters were only renewed in two-year increments.

PARC is comprised of hundreds of aviation stakeholders and experts from the FAA and industry. A smaller group of individuals, headed by industry chair Mark Bradley (Delta Airlines) and the Designated Federal Representative (DFR) Bruce DeCleene (AFS-400 Division Manager), "steer" its activities. PARC makes recommendations to Peggy Gilligan (AVS-001 Associate Administrator). The FAA then considers the recommendations and drafts responses.

In the past, PARC input was invaluable in drafting the Roadmap for Performance-Based Navigation (PBN) and helped update numerous FAA regulatory documents as well.

Some of PARC's accomplishments include:

- ✓ Flight Deck Automation Working Group 2013 Report
- ✓ Two PBN Roadmaps, which have since been subsumed into the NextGen Implementation Plan
- ✓ Input to numerous PBN-related Advisory Circulars (ACs), including: AC 20-153 (formerly AC 20-DB), AC 90-100 (U.S. Terminal and En Route Area Navigation (RNAV) Operations), and Appendix 3 to AC 90-101 for Database Validation Criteria
- ✓ Reduced Vertical Separation Minimum (RVSM) action team dealing with streamlining approvals

They continue to provide guidance and recommendations to help the FAA transition to a PBN National Airspace System (NAS). PARC's future efforts will include:

- ✓ Develop recommendations from various working group activities
- ✓ Continue work on Oceanic Data Communications
- ✓ Increase focus on Domestic Data Communications

For more information on PARC products, please visit the website.

For questions regarding this project, please contact Cliff Smith at Cliff.CTR.Smith@faa.gov.

Highlighted Stories

Creating a Leaner OpSpec for ADS-B Out Operations

This summer, AFS transitioned from the high work intensive Operations Specification (OpSpec) A353 to a much more user friendly OpSpec A153.

The A153 OpSpec authorizes U.S.-registered aircraft to conduct Automatic Dependent Surveillance Broadcast (ADS-B) Out operations outside of U.S.-designated airspace. An A153 OpSpec is issued when the civil aviation authority of foreign states require U.S. operators to obtain "state of registry" approval to conduct ADS-B Out operations within their airspace.

The A353 OpSpec

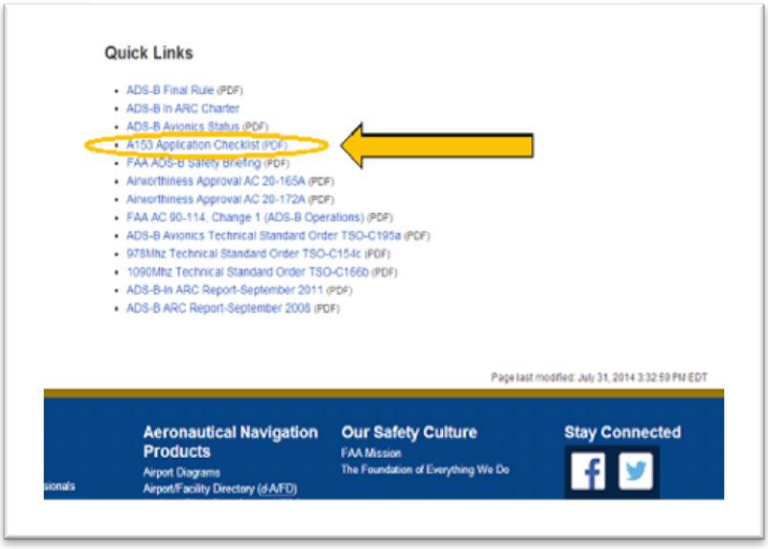
Under OpSpec A353, each application was roughly 200 pages long and required three levels of review prior to approving the application: (1) Field Office, (2) Regional Office, (3) and Headquarter's Policy Divisions of the FAA. This lengthy process coupled with a 200+ page application took roughly three months to complete. In the meantime, operators were unable to fly into international ADS-B Out airspace above Flight Level (FL) 290 resulting in higher fuel consumption rates. Not only was the application process costly for operators, but the FAA system was overburdened. Between January and July 2014, AFS-430 processed a total of 235 A353 applications, a large increase from the approximately six applications processed per year previously.

Recognizing the problems the A353 application posed to industry and inspectors, ADS-B representatives from AFS-400, -200, -300, and -800 set out to revise the OpSpec.

A Leaner Application: The A153 OpSpec

As ADS-B technology matured and more operational experience was gained, it became apparent that the approval process could be simplified. Reviewing the requirements one by one, the representatives culled down the OpSpec to the pieces the FAA needed to review in order to grant an OpSpec. Airworthiness requirements, pilot procedures, and training requirements were stripped because those requirements would clearly be met so long as the operator could show the appropriate installation documentation. Additionally, the review is now solely conducted at the field level. Consequently, the A153 application should only take a few weeks to approve versus the three-month wait with the A353.

A153 Application Screenshot



On July 24th, the A153 approval went live at the local FSDO/CHDO level. Permanent guidance for the AFS 8900 is in final coordination and this change is also incorporated into the AC 90-114 change (also in the final stages of coordination). New templates are applicable to parts 91/91K/121/121&135/125/125M/135. The templates and a new A153 checklist have been uploaded to WebOPSS. The new A153 checklist is also posted at the bottom of the ADS-B public website under Quick Links.

For more information on the A153 OpSpec, please contact Roger Sultan at Roger.Sultan@FAA.gov.

Employee Spotlight

Sherri Hubbard

Q: What do you do, how long have you been with FAA, and where are you based?
SH: *I am an Aviation Safety Inspector (ASI) in the Flight Procedure Implementation and Oversight Branch, AFS-460, providing oversight of third party service providers and assisting with waivers and approvals for instrument approach procedures. I have been with the FAA for five years in Oklahoma City, OK.*

Q: How did you end up with the FAA?
SH: *I was furloughed from United in 2003 and had full intentions of returning when I was recalled. During my furlough, I did my best impression of a stay-at-home mom. I learned a lot; for example, asking "what's for dinner" when my husband got home from work may not be the best question to lead with. I also realized I wanted to work outside the home, but have a job with a schedule where I could be at home with my kids more and not have to commute. I feel very fortunate I was able to find a home at the FAA.*

Q: What is your favorite part about working here?
SH: *There are many aspects that I enjoy - facing new challenges, working with people in industry, and being a part of a team that affects positive change and improvements. However, the best part is the people I work with and the support we provide each other.*

Q: Best life lesson?
SH: *"If we do not feel grateful for what we already have, what makes us think we'd be happy with more?"*

Q: What is your greatest accomplishment?
SH: *My family is what I value most and am most proud of – at the end of the day, they are what really matters.*

Brian Hint

Q: What do you do, how long have you been with FAA, and where are you based?
BH: *I'm an ASI (Operations) based in Washington, D.C. I've been with the FAA over four years and I'm lead Flight Standards policy writer for Electronic Flight Bag Policy and Datalink of Aeronautical Information. In other words, I get to work with FAA field inspectors and industry to develop language implementing technology that pilots can utilize in the cockpit to enhance situational awareness.*

Q: How did you end up with the FAA?
BH: *In 2010, I had the opportunity to work for the Inspector General of the Air Force at the Pentagon. The lifestyle was great. I wrote policy during the week and flew missions with the New York Air National Guard every other weekend. I thought working for the FAA might be conducive to this lifestyle, and it ended up being the best career decision of life.*

Q: What is your favorite part about working here?
BH: *I love to travel internationally and visit with other Civil Aviation Authorities to better understand how they are handling the same issues we face implementing Electronic Flight Bag policy. The technology is moving so rapidly. It's interesting to see how other policy writers work to quickly implement policy that's forward-looking enough to address tomorrow's issues.*

Q: Best life lesson?
BH: *No matter what your job is, never give it less than 100%. In the past, I was a dishwasher, clam shucker (fastest this side of the Mississippi!), boat bottom cleaner, car detailer, and short order cook. I really despised all those jobs, but at least I was proud of the work I did. To this day, nobody can clean a deep fryer better than me. Nobody.*

Q: What is your greatest accomplishment?
BH: *Professionally, it was graduating top of my pilot training class in the Air Force. Personally, it was finding the greatest woman in the world to marry.*

System Safety

OSR/OSA Process Flow, Responsibility, and Timeframe:

FAA Order 8040.4A governing Safety Risk Management (SRM) policy requires organizations to conduct a safety risk assessment anytime there is a change to the National Airspace System (NAS). The safety risk assessment is a formalized method for us to identify and track hazards and control safety risk. Improved coordination and communication across FAA organizations enhances safety risk decision-making.

In AFS-400, we perform risk assessment in one of two ways: (1) Operational Safety Review (OSR), or (2) Operational Safety Assessment (OSA).

An OSA takes the Division, on average, one to two months to conduct, while the Division can complete an OSR within one to three days. An OSR may be conducted when a significant change is under consideration that will affect the NAS including changes to AFS procedures, rules, or conformance standards. If sufficient evidence is available during the course of the review, then the OSR Panel will document the results in the OSR Memo. This evidence may include reports from the FAA, other government entities, or industry that are applicable to the proposed change. An OSA may be conducted when an in-depth review is apparent or when an OSR fails to reach a consensus that the safety case for the change is simple and presents an acceptable risk.

Flash Questions: CAT I/II Approaches

Q: What is Special Authorization Category I?

A: *Special Authorization Category I (SA CAT I) is a type of standard instrument approach procedure using an Instrument Landing System (ILS), flown to a decision height (DH) of 150 feet above the ground, and a minimum Runway Visual Range (RVR) of 1400 feet. SA CAT I requires operational approval from Flight Standards and must be flown with a Head-Up Display (HUD) down to the DH. An advantage of the SA CAT I approach is that it allows for lower than standard CAT I minima on CAT I facilities by leveraging the advanced avionics and safety features of modern aircraft. The operational approval must include an approved training program for the pilots. There are approximately 95 SA CAT I ILS approaches in the NAS.*

Q: What is Special Authorization Category II?

A: *Special Authorization CAT II (SA CAT II) is a type of standard instrument approach procedure using an ILS, flown to a DH of 100 feet above the ground, and a minimum RVR of 1200 feet. SA CAT II differs from a standard Category II approach because it allows for reduced ground lighting infrastructure. It can be flown with a Medium Intensity Approach Lighting System with Runway alignment indicator lights (MALSR) and does not require runway centerline or runway touchdown lighting. SA CAT II approaches are less expensive to install and maintain than standard CAT II approaches but still provide the same level of service. SA CAT II requires operational approval from Flight Standards, and the operator must fly the approach to an automatic landing or fly the approach with a HUD that provides guidance all the way to touchdown. The advanced avionics of today's aircraft help mitigate the absence of some of the lighting and ground infrastructure required for standard CAT II. The operational approval must include an approved training program for the pilots. There are approximately 30 SA CAT II ILS approaches in the NAS.*

Have a question? Contact us at AVSNextgen@faa.gov.

AFS-400 Accomplishments

June 2014 – EOR Analysis of Risk for RNP AR

The Established on Required Navigation Performance (RNP) (EOR) analysis for RNP Authorization Required (AR) is for aircraft flying simultaneous independent parallel approaches to widely-spaced runways with Radius-to-Fix (RF) turns.

June 2014 – Established on RNP Seattle Human-in-the-Loop Report

Data was collected to analyze the operational risk of Simultaneous Dual Dependent Parallel Approaches at Seattle-Tacoma Terminal Radar Control Facility (TRACON) on runways spaced approximately 2500 feet apart, where one of the aircraft approaches includes a Radius-to-Fix (RF) Turn for RNP AR qualified aircraft and crew.

July 2014 – FTE Data Collection MOU for Horizon LPV/ Head-Up Display

The signed Flight Technical Error (FTE) data collection Memorandum of Understanding (MOU) is designed to validate an increased lateral navigation and vertical navigation tracking performance (reduced FTE) during the Instrument Meteorological Conditions (IMC) portion of a Localizer Performance with Vertical Guidance (LPV) approach down to the defined Decision Altitude (DA), as well as stable aircraft trajectory and energy state during the visual segment of the approach from DA to touchdown.

July 2014 – ICAO AWO Manual Update: Document 9365

This update includes International Civil Aviation Organization (ICAO) All Weather Operations (AWO) approach classification and information from Attachment J of Annex 6 concerning head-up display, enhanced vision systems, synthetic vision systems, and combined vision systems.

September 2014 – AWO OJT Module 2

This On-the-Job Training (OJT) program is for AWO specialists on 20:1 obstacle penetration and basic Terminal Instrument Procedures (TERPS) concepts. These subjects apply to AWO JTAs 5.5 Special Instrument Flight Procedures, 5.6 Foreign Terminal Instrument Procedure, 5.8 Obstacle Evaluation, and 5.9 Airports Aeronautical Studies.

Notes and Announcements

Newsletter Subscriptions

If you would like to subscribe to our newsletter, please email us at AVSNextGen@faa.gov and we will add you to our distribution list. Also, click here to access our previous newsletters.

Employee Spotlight Nomination

Nominate a peer to be featured in the "Employee Spotlight" section of our next newsletter by sending his or her name to AVSNextGen@faa.gov. Please include how this individual has contributed to AFS-400's mission.

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